

Quebec St to Guelph St



10th Ave Corridor Phase 3 Open Houses

Key Objectives

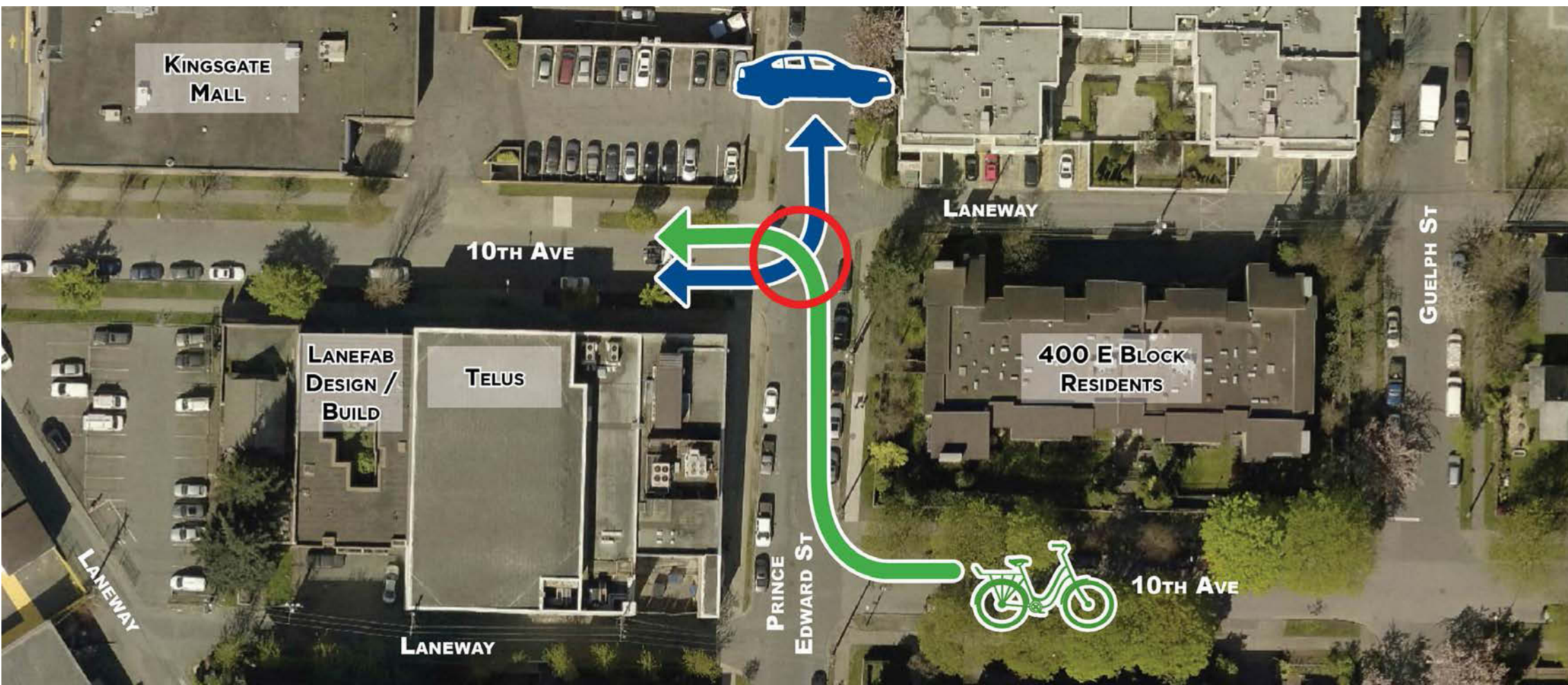
- Upgrade 10th Ave so it is safe and comfortable for people of **all ages and abilities**
- Improve comfort and accessibility for **people on foot**
- Accommodate the **loading and access needs** of adjacent businesses
- Preserve as much of the street's **healthy and mature tree canopy** as possible
- Ensure adjacent residents can continue to **park within a reasonable walking distance** of home



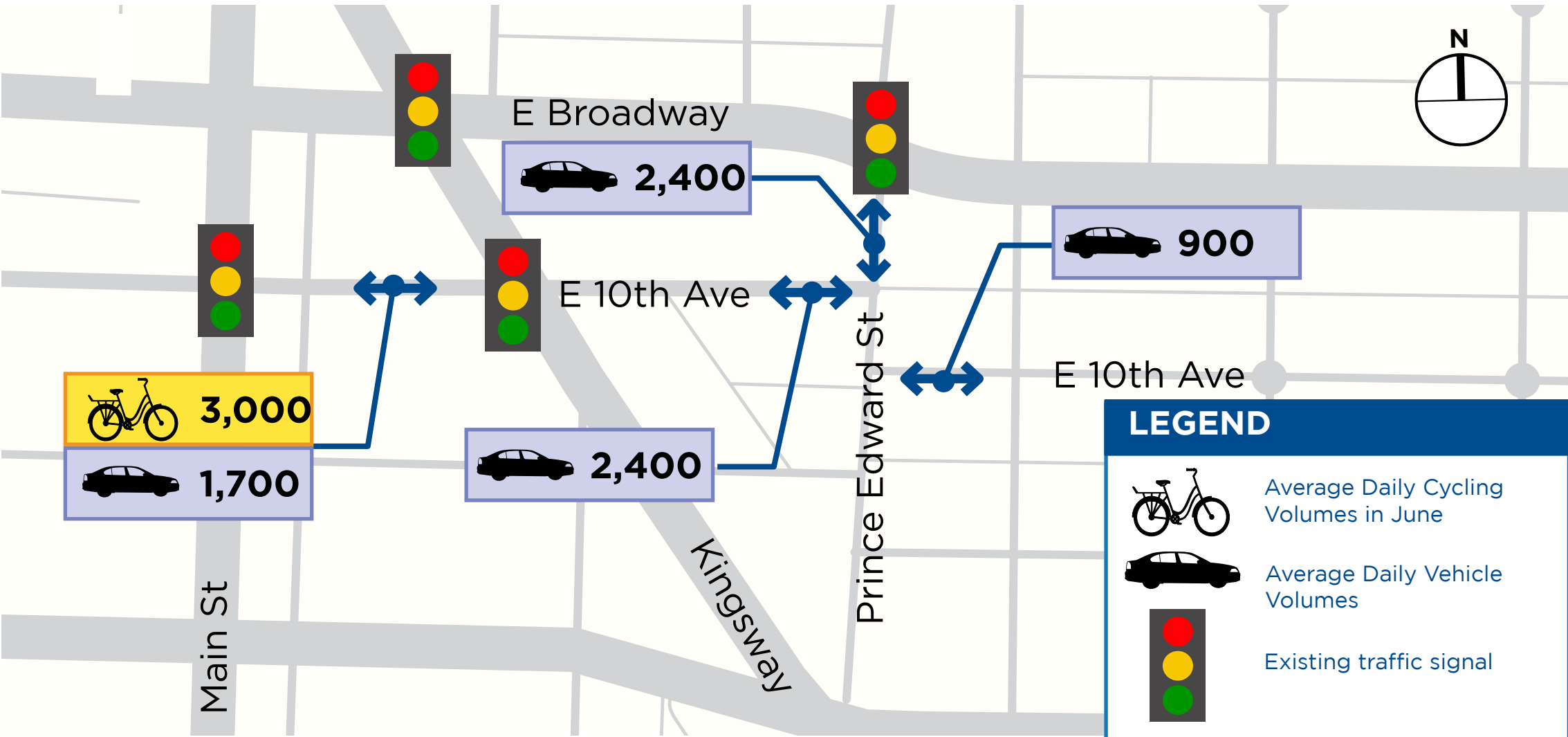
The Challenge

Motor vehicle traffic on this stretch of 10th Ave is relatively busy, particularly near Main St and the Kingsgate Mall. Furthermore, at the jog in 10th Ave at Prince Edward St, the primary desire lines for people driving and biking conflict (see diagram below). These conflicts are compounded by delivery trucks accessing the mall's loading bay off 10th Ave. Planned changes to 10th Ave west of Kingsway as a result of new development will ensure a consistent AAA bikeway design through this busy area.

Vehicle and Bicycle Desire Line Conflict



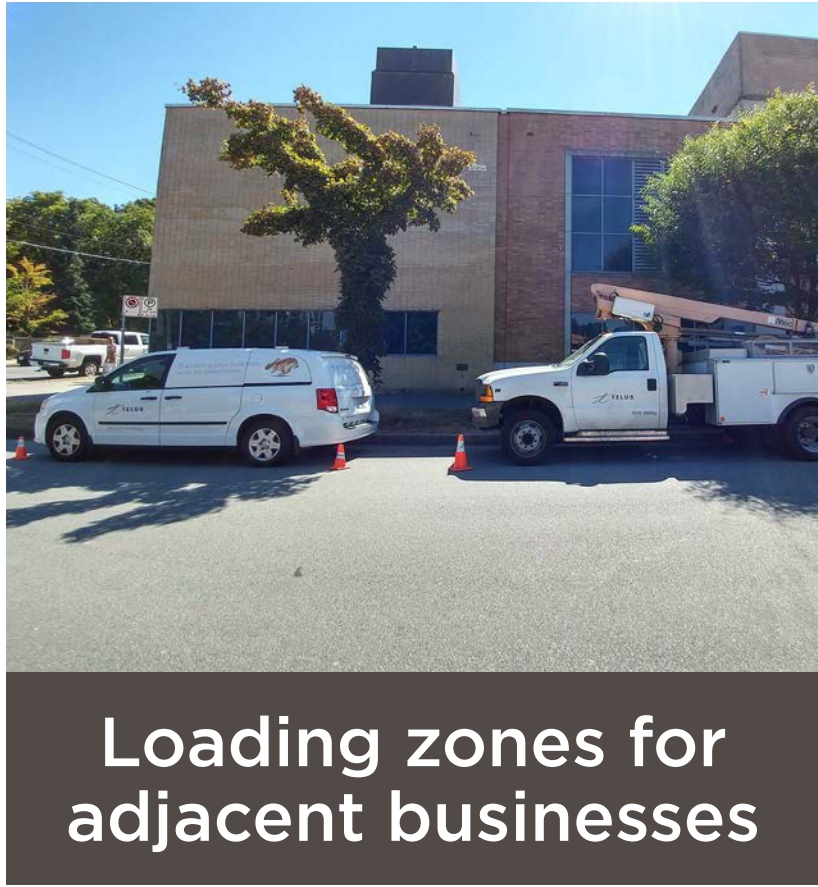
Existing Daily Vehicle and Bike Volumes



Offset alignment of 10th Ave



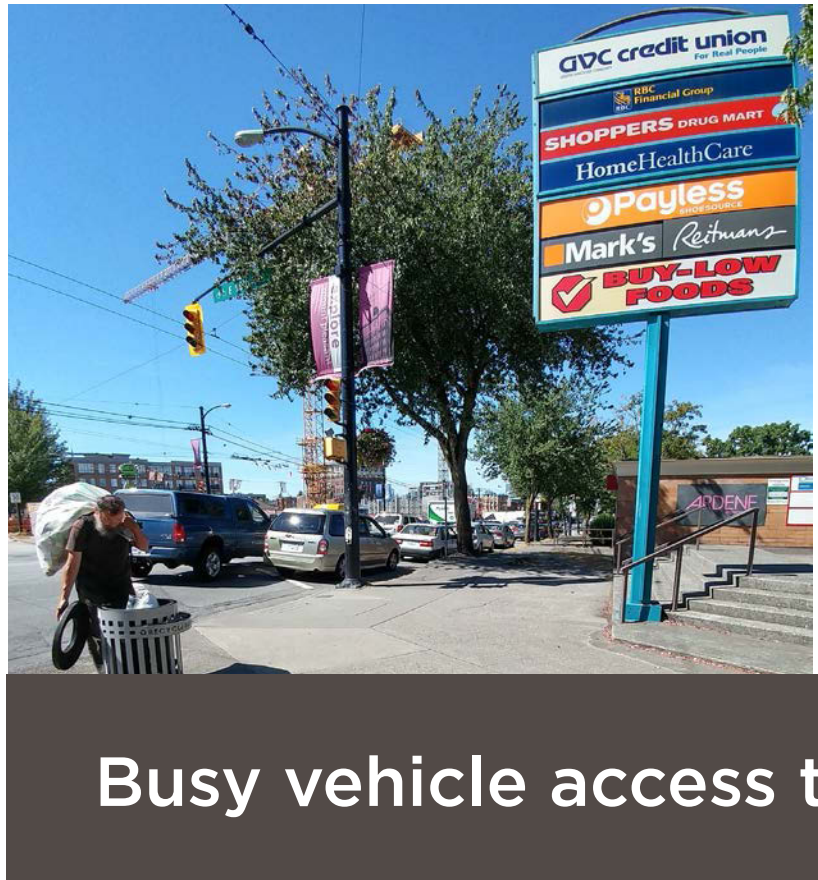
Loading access for delivery trucks



Loading zones for adjacent businesses



On-street parking



Busy vehicle access to/from Kingsgate Mall

Bike volumes based on 12-hour demographic and manual intersection counts conducted by City of Vancouver in summer 2016, expanded to an average 2016 June day based on bike volumes at 10th Ave and Clark St permanent bike counter.

Vehicle volumes based on 24-hour average mid-week day (Tues, Wed, or Thurs) CoV portable hose counts, from which bikes are filtered out.

Developing the Concept

A number of design options were considered to develop the proposed design for the Kingsway to Guelph segment of 10th Ave. Each proposed solution raised different challenges.

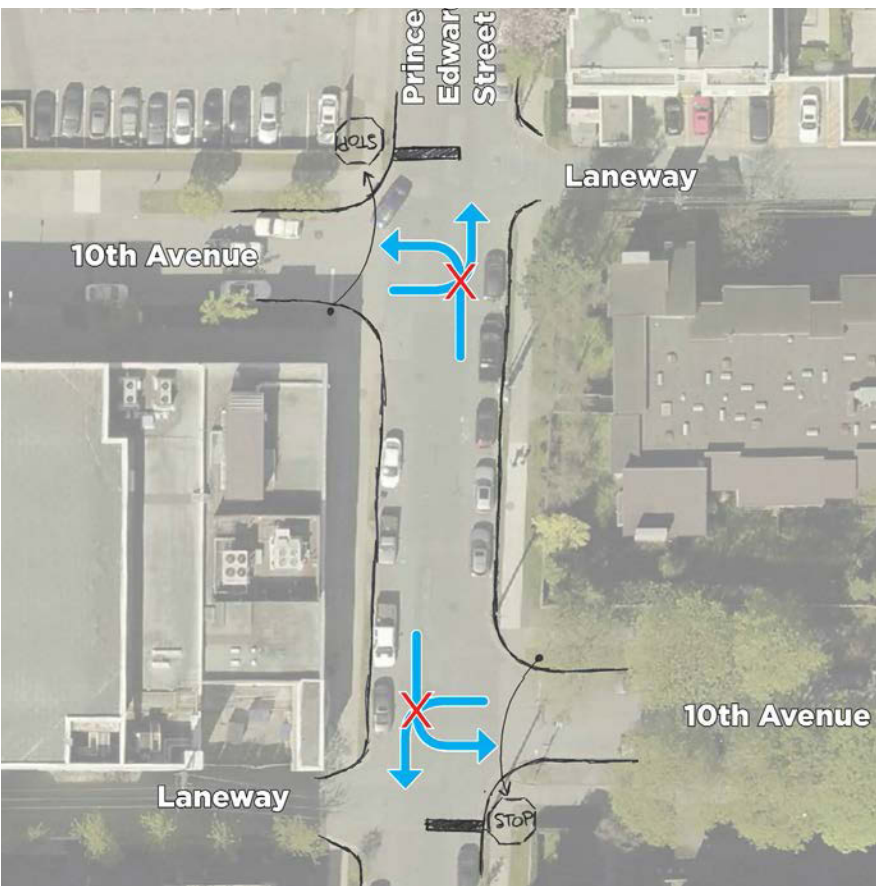
Rotate Stop Signs

Concept Description:

At Prince Edward and 10th, rotate the stop signs so that they face road users on Prince Edward St and are located outside the jog in 10th Ave.

Challenges:

Without introducing additional stop signs on Prince Edward, there would be an uncontrolled conflict of vehicle movements through the intersection. Thus, additional tightly-spaced stop signs would be required on Prince Edward, which would not provide bicycle priority through the jog nor would it resolve key turning conflicts between people driving and biking at driveways and intersections adjacent to the mall.

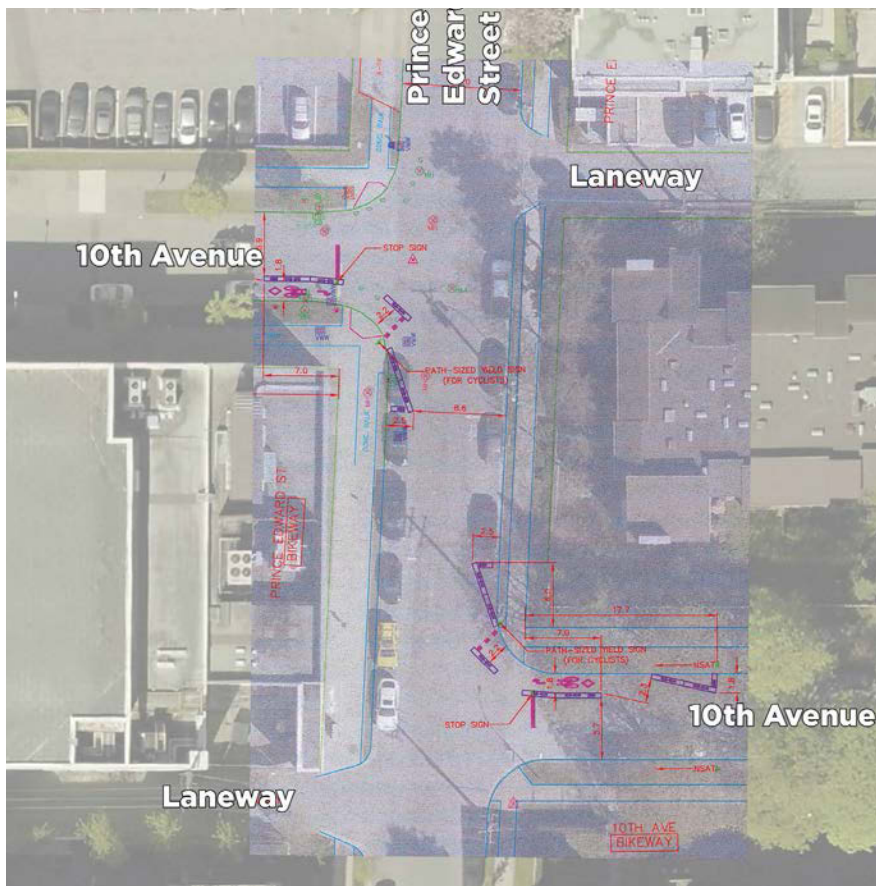


Stop Sign Only for Vehicles

Concept Description:

Test installing interim measures to convert the stop condition to a yield condition for people biking, such as with gravity barriers and by adjusting the intersection's signage and paint.

Challenges: Staff felt that this unconventional signage would be too difficult to communicate to road users that only people driving were required to stop. As well, this approach also would not resolve key turning conflicts between people driving and biking at driveways and intersections adjacent to the mall.



Prince Edward St Full Closure

Concept Description:

Close off Prince Edward St to motor vehicles without any changes to 10th Ave.

Challenges: This is an element of the recommended design, but on its own it would not provide full bicycle priority through the jog nor resolve key turning conflicts between people driving and biking at driveways and intersections adjacent to the mall.



Traffic Diverters

Concept Description:

Through the use of concrete traffic diverters, ban people driving from turning across the key conflict points through the jog in 10th Ave, without encouraging more driving on 10th Ave.

Challenges: This approach could potentially encourage more traffic on local streets in the neighbourhood southeast of the mall.



Flip T-intersections

Concept Description:

By realigning the curb, this design would make 10th Ave the through street, with Prince Edward “T-ing” into 10th Ave at both ends.

Challenges: Staff felt that this approach was too constrained by the narrow right-of-way of both streets as well as the laneways to be effective. As a result, it was felt that the central design intent would not be intuitive to road users. Furthermore, this approach also encourages people driving to stay on 10th Ave. Lastly, it would still mean people driving and biking are sharing the roadway through the jog and would not resolve key turning conflicts between people driving and biking.



South-side Bi-directional Protected Bike Lane for the Entire Block

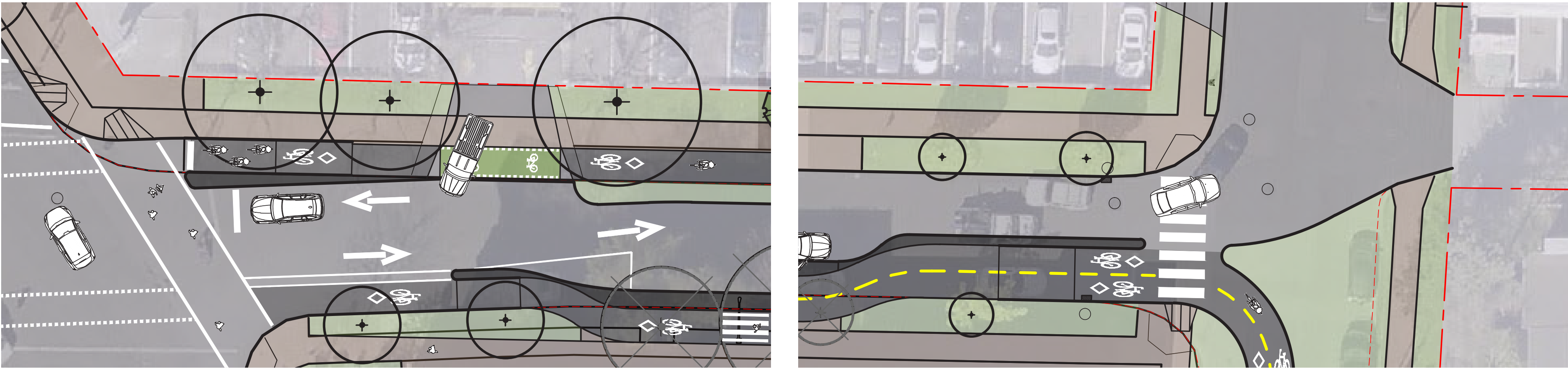
Concept Description: Install a bi-directional bikeway along the south side of 10th Ave for the entire block adjacent to the mall.

Challenges: In order to avoid dangerous “left hook” conflicts between turning motorists and people biking across 10th Ave at Kingsway, either westbound left turns would have to be banned or a protected traffic signal phase introduced, which would result in delays for all road users. Secondly, due to the skew of the intersection, in order to ensure trucks turning right off Kingsway do not hit cyclists waiting at the light, people biking would have to wait for their green light setback a considerable distance from the intersection.

The Concept

Through the use of protected bike lanes and traffic calming measures, several key conflict points between people walking, biking and driving can be eliminated or improved while still accommodating all necessary vehicle access to adjacent destinations. This will result in more vehicle traffic at the Prince Edward and Broadway intersection, including large delivery trucks. As such, staff are proposing that it is upgraded to a full traffic signal. Similarly, with protected bike lanes at the Kingsway and E 10th Avenue intersection, staff are proposing that it be upgraded to a full traffic signal.

Proposed Changes at Kingsway and Prince Edward St Intersections



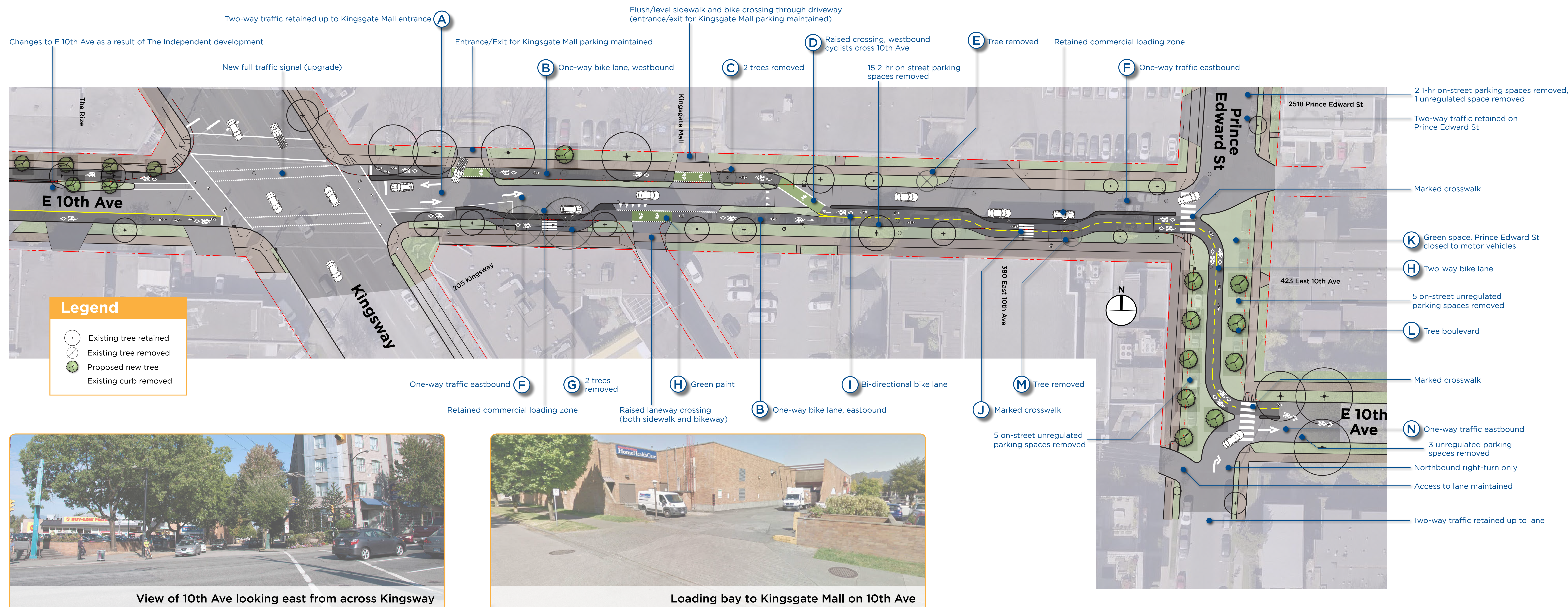
Proposed Changes to Motor Vehicle Circulation



**Provide
your
feedback!**

Review the proposed design for 10th Ave between Quebec and Guelph. Complete the comment sheet to provide feedback on materials presented.

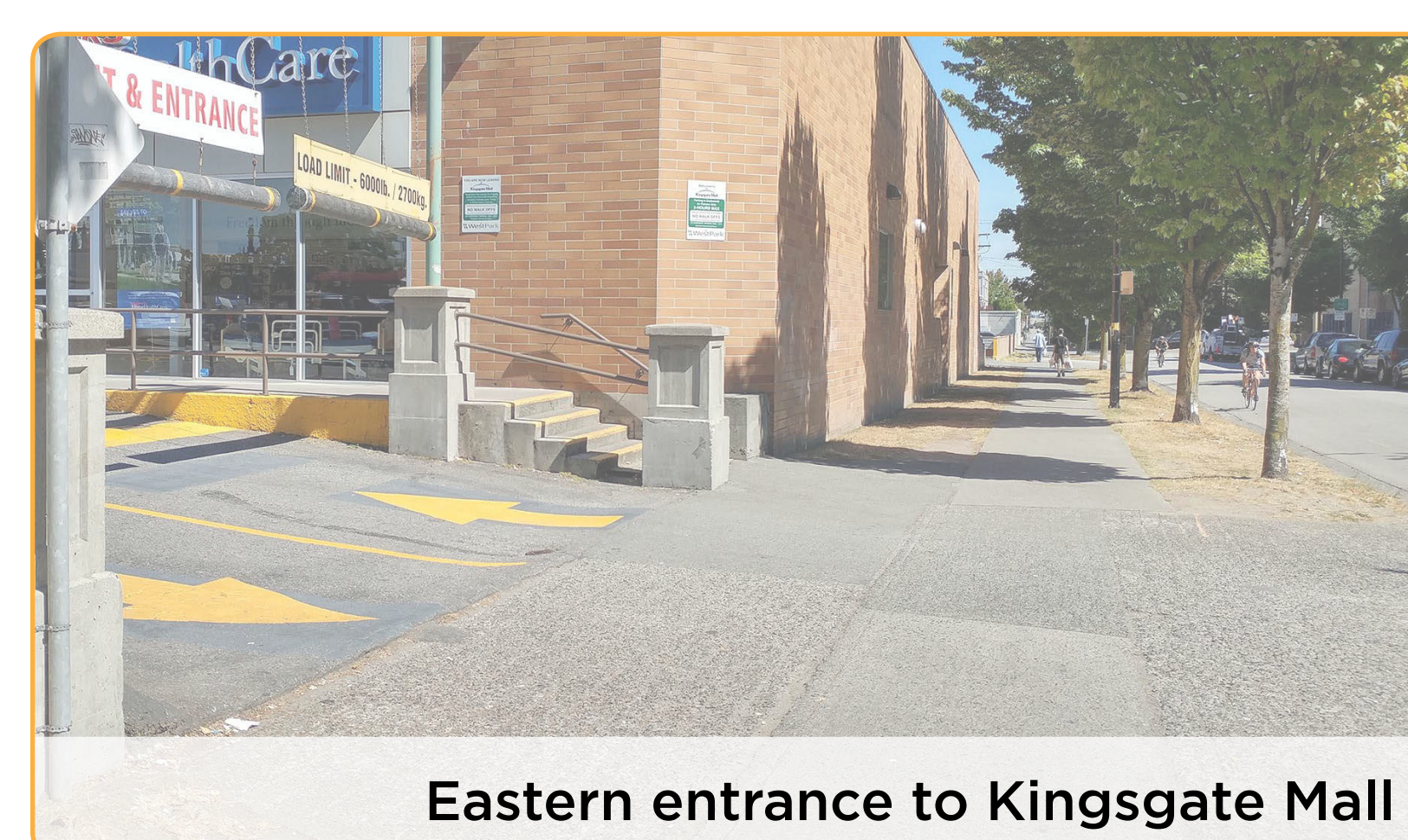
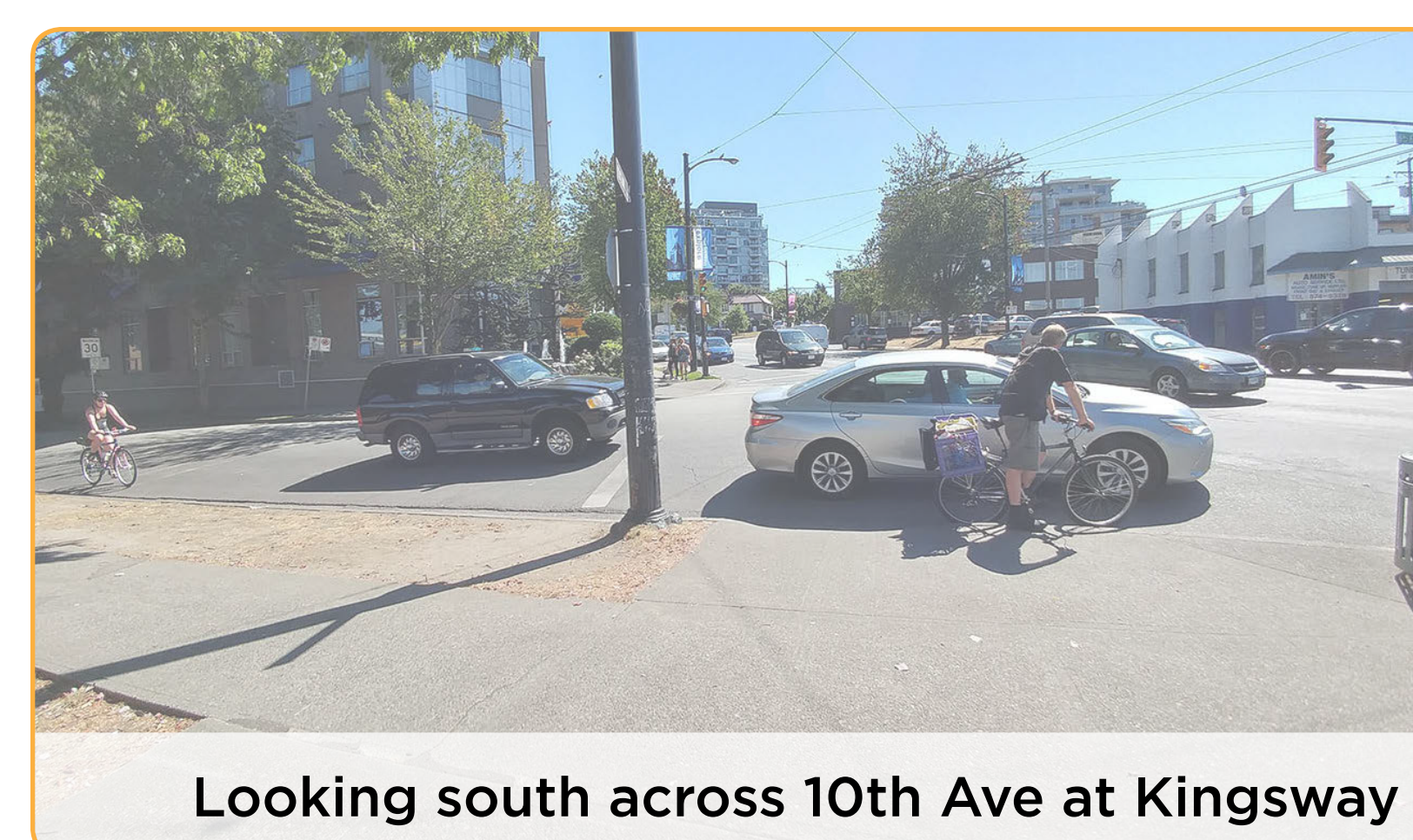
10th Ave - Kingsway to Prince Edward St Proposed Design



What is Different?

Why?

<p>Removal of 15 2hr and 3 unregulated on-street parking spaces from E 10th Ave</p> <p>Removal of 5 unregulated and 2 1hr on-street parking spaces on Prince Edward St</p> <p>Note, additional room for 6 parking spaces on Prince Edward Street will be lost. This parking is frequently used although not legal since it is in a T-intersection</p>	<ul style="list-style-type: none"> To accommodate adjacent street uses (i.e. protected bike lanes, two-way/one-way travel, commercial loading zones) To retain street trees
<p>Two-way motor vehicle traffic maintained between Kingsway and the western Kingsgate Mall entrance</p>	<ul style="list-style-type: none"> To allow more direct access to Kingsway for people leaving the mall by car from the upper parking deck
<p>New raised protected bike lanes on both sides of the street (uni-directional)</p>	<ul style="list-style-type: none"> To improve comfort and safety for people of all ages and abilities to cycle
<p>Removal of two trees</p>	<ul style="list-style-type: none"> To accommodate a protected bike lane on the north side of E 10th Ave
<p>Raised crossing for westbound cyclists cross E 10th Ave to the north side of the street</p>	<ul style="list-style-type: none"> For safer operation of the Kingsway & 10th intersection To avoid complex traffic signal phasing that would likely confuse and delay many road users To slow through motorists at this bike crossing
<p>Tree removed</p>	<ul style="list-style-type: none"> To accommodate semi trailer trucks accessing the mall's loading bay



What is Different?

Why?

<p>Motor vehicle traffic only permitted one-way eastbound between Kingsgate Mall (western) entrance and Prince Edward St</p>	<ul style="list-style-type: none"> To accommodate a protected bike lane and the existing commercial loading zone serving the Best Western To minimize landscaping impacts on E 10th Ave
<p>Removal of two trees</p>	<ul style="list-style-type: none"> To accommodate a protected bike lane and the existing commercial loading zone serving the Best Western
<p>Green paint at all bikeway crossings through intersections and driveways</p>	<ul style="list-style-type: none"> To improve awareness of conflict points between turning motorists and people biking
<p>New raised protected bike lane on the south side of the street (bi-directional)</p>	<ul style="list-style-type: none"> To improve comfort and safety for people of all ages and abilities to bike To minimise landscaping impacts on E 10th Ave
<p>Marked crosswalks at commercial loading zones</p>	<ul style="list-style-type: none"> To notify people biking that they are to yield to crossing pedestrians
<p>New green space on Prince Edward St through a closure to motor vehicles</p>	<ul style="list-style-type: none"> To reduce turn conflicts people driving and biking To expand public space, including new street trees
<p>New tree boulevard separating the sidewalk and protected bike lane</p>	<ul style="list-style-type: none"> To provide more space for new street trees To reduce conflicts between people walking and biking
<p>Removal of one tree</p>	<ul style="list-style-type: none"> To accommodate a protected bike lane and a commercial loading zone primarily serving the Telus building
<p>Motor vehicle traffic only permitted one-way eastbound between Prince Edward St and Guelph St</p>	<ul style="list-style-type: none"> To improve comfort and safety for people of all ages and abilities to cycle by reducing vehicle volumes on E 10th Ave